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TITLE: Variable bit rate encoding

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INVENTOR-INFORMATION:

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ABSTRACT:

A rate control algorithm for an MPEG-2 compliant encoder has embodiments useful for constant bit rate and variable bit rate encoding. In particular, the present invention relates to variable bit rate encoding.

4 Claims, 16 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 9

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Detailed Description Text - DETX (103):

As indicated above, the quantization step size is a product of a weighting matrix  $W[v][u]$  and a quantization scale factor  $Q.sub.n$  (known also as  $mquant$  in the MPEG-2 standard). There are 31 possible ( $Q.sub.n$ ). ( $W[v][u]$ ) matrices in accordance with MPEG-2. Illustratively, these matrices are all stored at the encoder. In addition, one or more panic matrices may be stored. For example, in the panic mode, if it is desirable to encode only the DC transform coefficient, the transform coefficients  $F[v][u]$  may be multiplied by an element from a panic matrix  $p.sub.0 [v][u]$ , whose only non-zero value is  $p.sub.0 [0][0]$ . If the panic is less severe, a different panic matrix  $p.sub.1 [v][u]$  may be utilized which has a few AC non-zero values in addition to the DC non-zero value. This permits the intrablocks to be coded with a DC coefficient and a few non-zero AC coefficients. In general, a plurality of panic matrices may be stored at the encoder with different numbers of non-zero AC coefficients. Depending on the severity of the panic, a particular panic matrix with a particular number of non-zero AC coefficients is selected.